

Jun 22nd, 9:30 AM - 9:45 AM

Case Studies V: FishMigrationRiver: Project Update

Roef Mulder
Province Fryslân

Follow this and additional works at: https://scholarworks.umass.edu/fishpassage_conference

Mulder, Roef, "Case Studies V: FishMigrationRiver: Project Update" (2016). *International Conference on Engineering and Ecohydrology for Fish Passage*. 3.

https://scholarworks.umass.edu/fishpassage_conference/2016/June22/3

This Event is brought to you for free and open access by the Fish Passage Community at UMass Amherst at ScholarWorks@UMass Amherst. It has been accepted for inclusion in International Conference on Engineering and Ecohydrology for Fish Passage by an authorized administrator of ScholarWorks@UMass Amherst. For more information, please contact scholarworks@library.umass.edu.



the FishMigrationRiver – project update

Roef Mulder
Province Fryslân

The Dutch Delta



The Dutch Delta



The Afsluitdijk

- 32 km of dyke completed in 1932
 - safety against flooding
 - fresh water reserve (agriculture and drinking water)
- > Zuider Sea estuary was closed off: Lake IJssel was born.

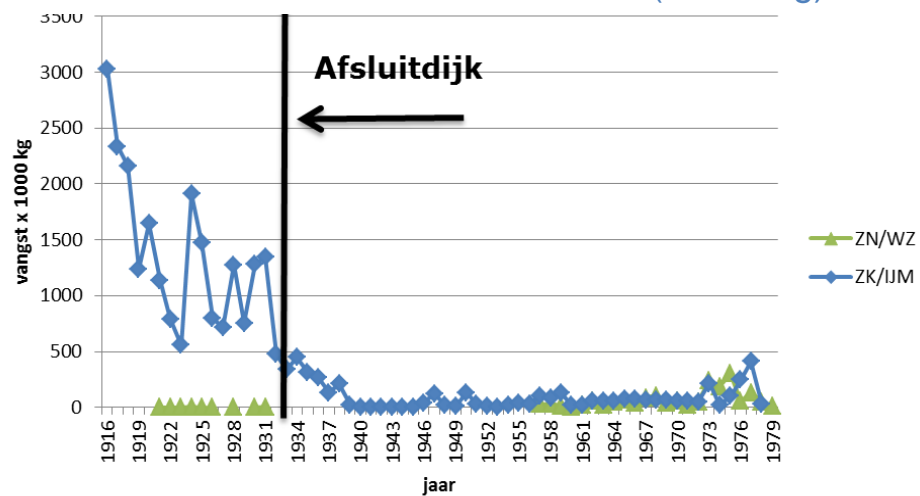


Huge impact on biodiversity and fish populations

- purchase (dam removal) is not an option -



annual catch of smelt in Lake IJssel (x1000 kg)



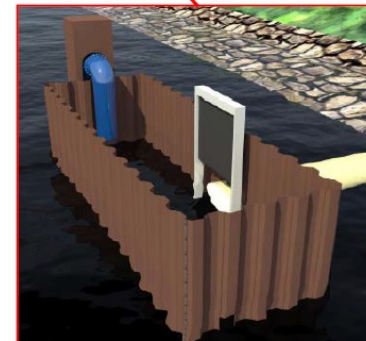
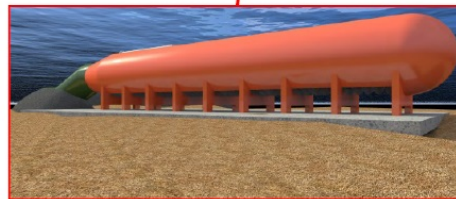
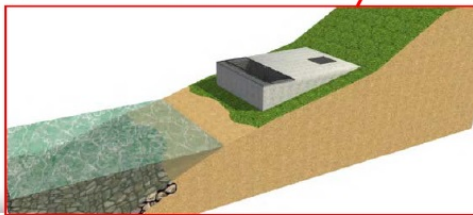
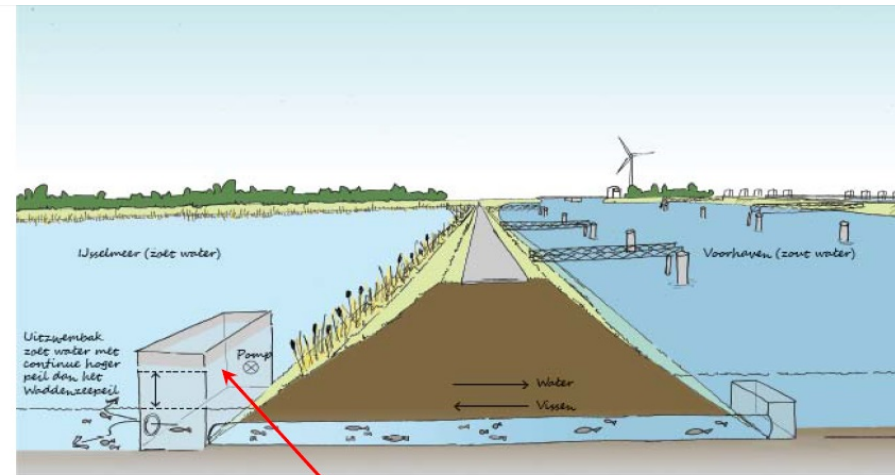
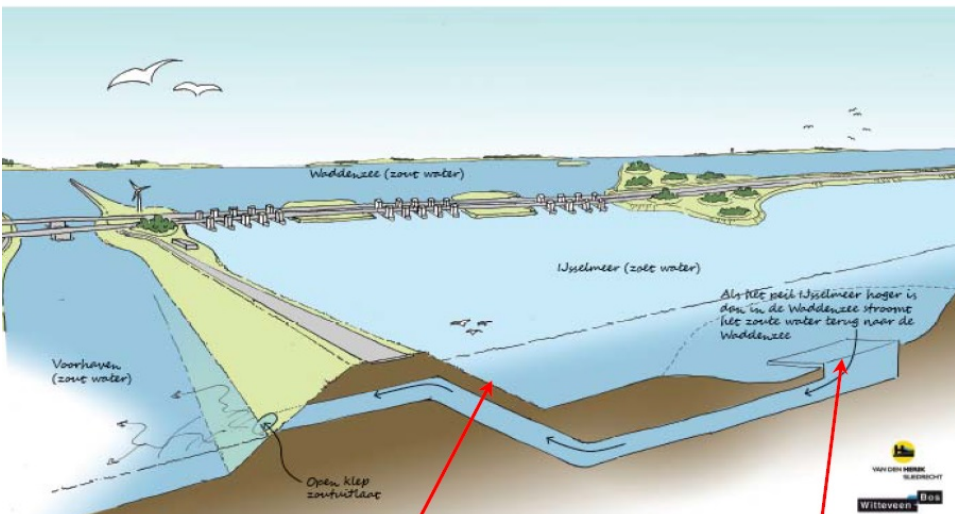
EU Water Framework Directive;

**Measures to improve fish
migration at
Den Oever & Kornwerderzand**



EU Water Frame Directive measures (National Water Board Rijkswaterstaat);

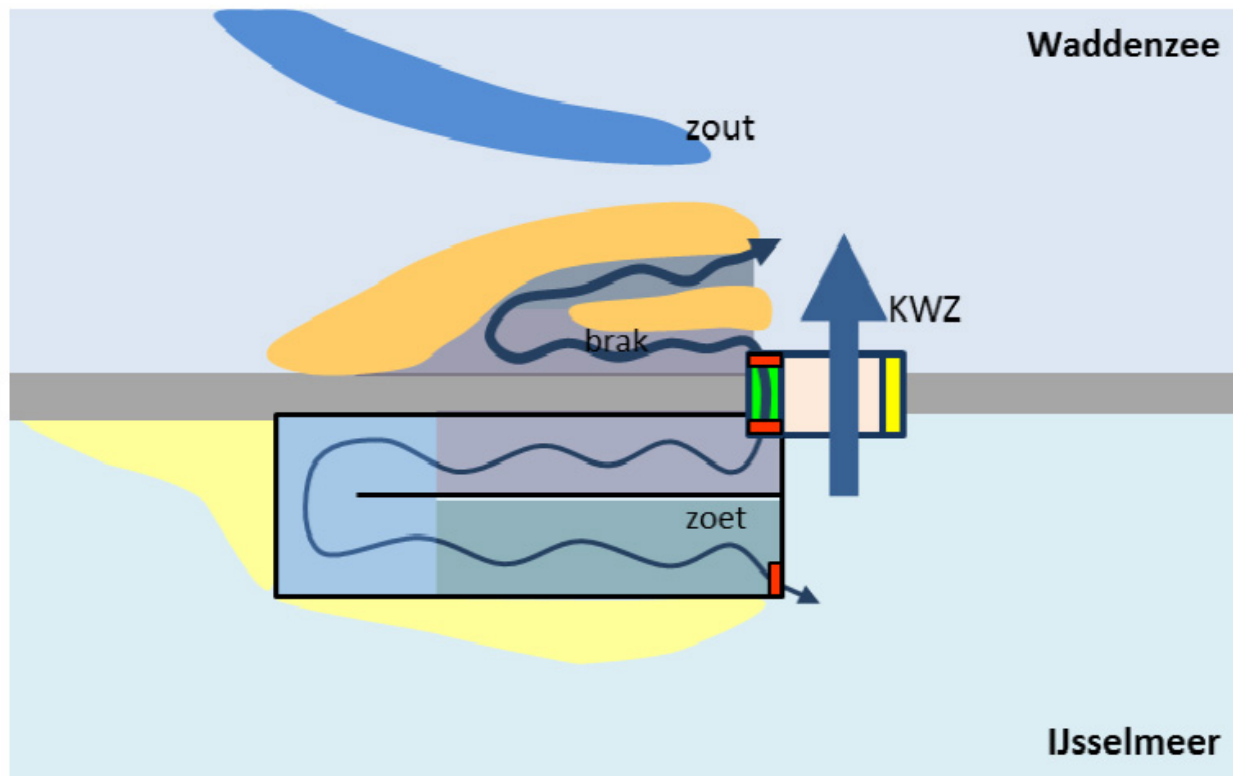
- fish friendly sluice-management at both sluices
- siphon for the return of salt water
- technical fishway at Den Oever










Present situation Kornwerderzand

2011: Initiative by NGO's for the FishMigrationRiver



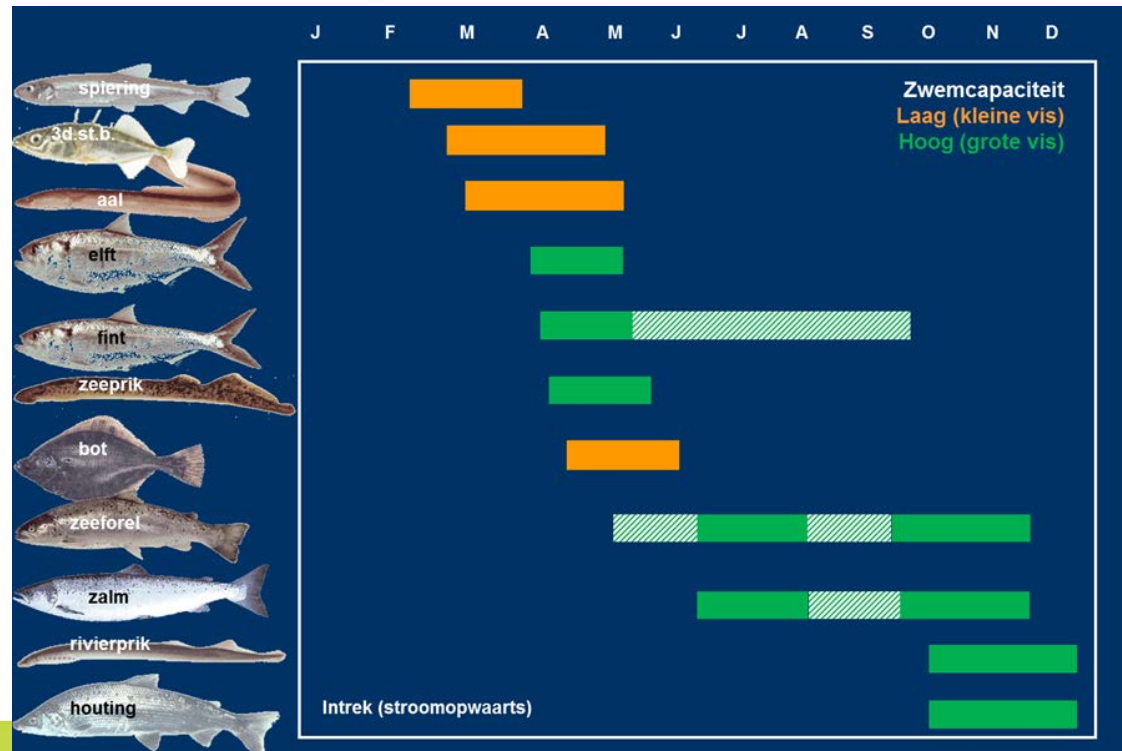
-  Spuisluis
-  Schutsluis (recreatie/ beroepsvaart)
-  Vispassage
-  Brakwater-rivier
-  Afsluitbare opening
-  Kwelder (hoogwatervrij)
-  Zandplaat

the concept for a tidal fishway at Kornwerderzand

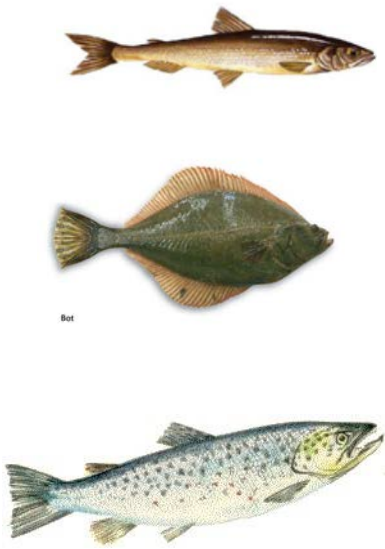
“adopted” by regional governments in 2012
province Fryslân – “De nieuwe Afsluitdijk”

Ecological specifications in the design:

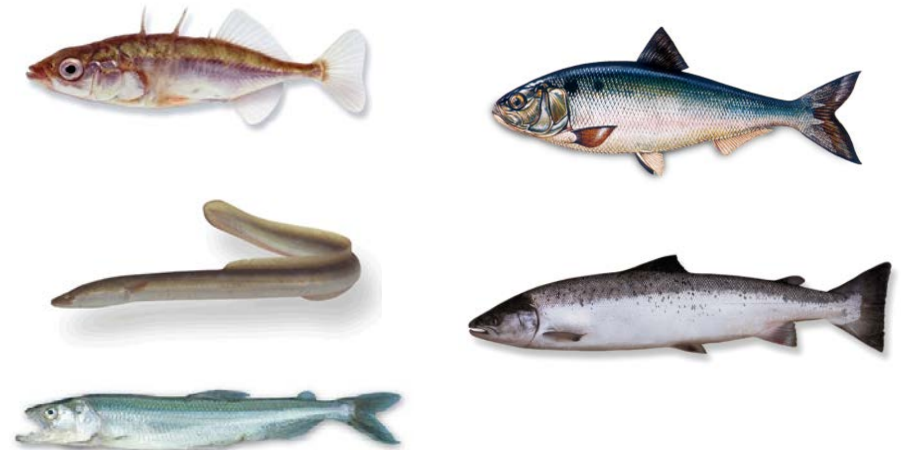
- Facilitate all migratory species
- Focus on tidal migrants (incoming tide)
- Full migration-window (day and year)
- Substantial attraction-flow (competition with discharge sluices)
- Gradient salt to fresh as transition zone for physiological adaptation and feeding/spawning habitat for marine fish



Research on fish behaviour, timing and distribution



Figuur 3-32 Individuele zwempatronen voor twee succesvol ingetrokken zeeprikken. De tracks (posities per minuut) zijn geschat op basis van simultane detecties bij meerdere receivers, waarbij minimaal een onzekerheidsmarge van 50 m moet worden aangehouden, dus de oevers kunnen ook bezocht zijn.



National waterboard

Permit (nature-landscape protection)

Local residents

Permit (water authority)

Ecological
specifications

Owner of the water

From demands to design:
Permits and stakeholders

Permit (historic values)

Permit (animal/species protection)

Hydraulic specifications

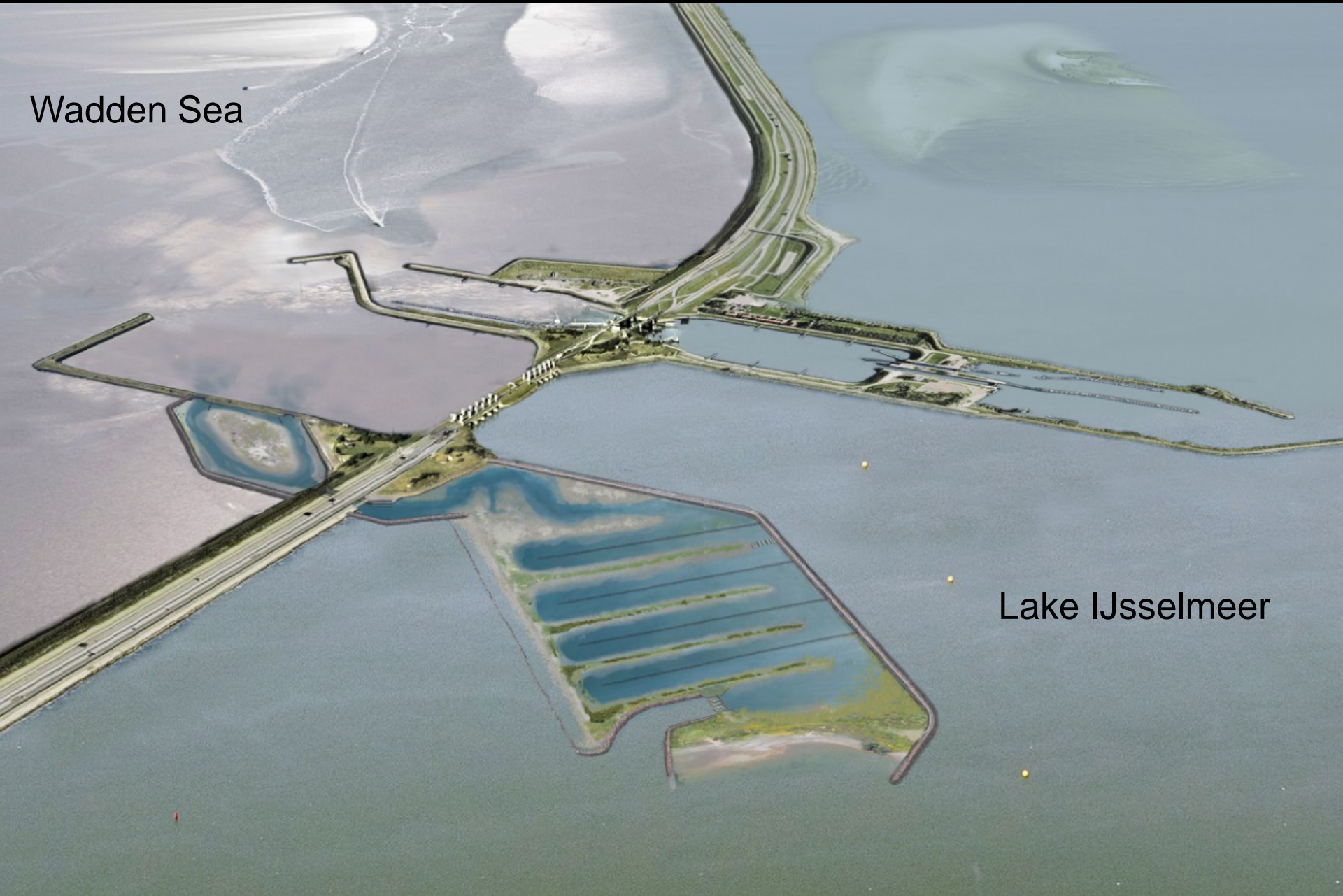
Morphological specifications

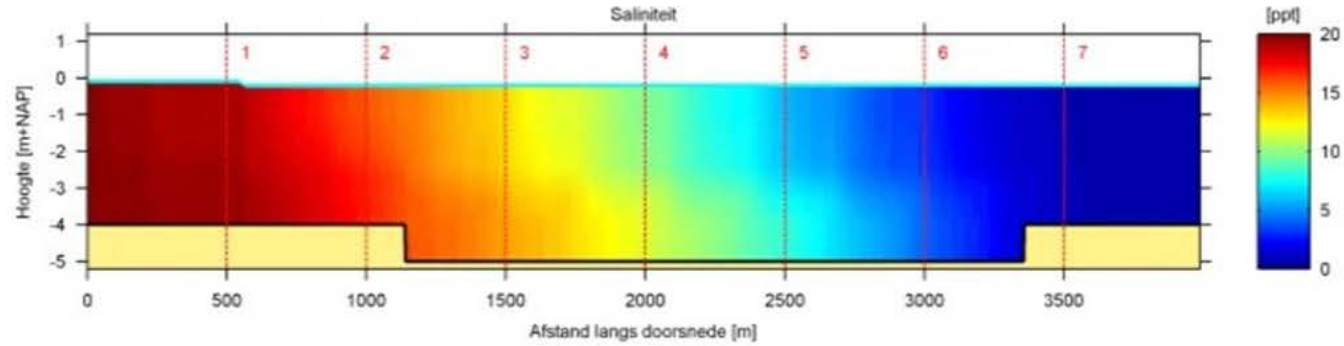
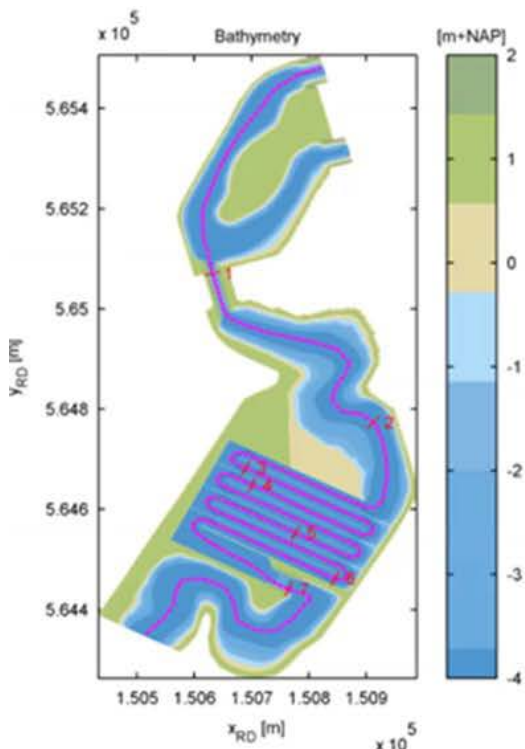
Owner of the dike

Local fishermen

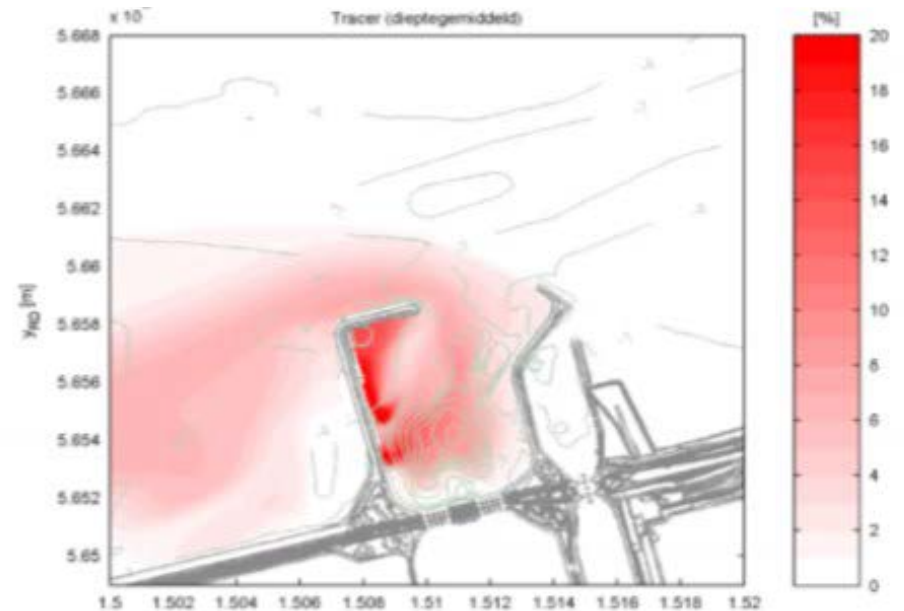
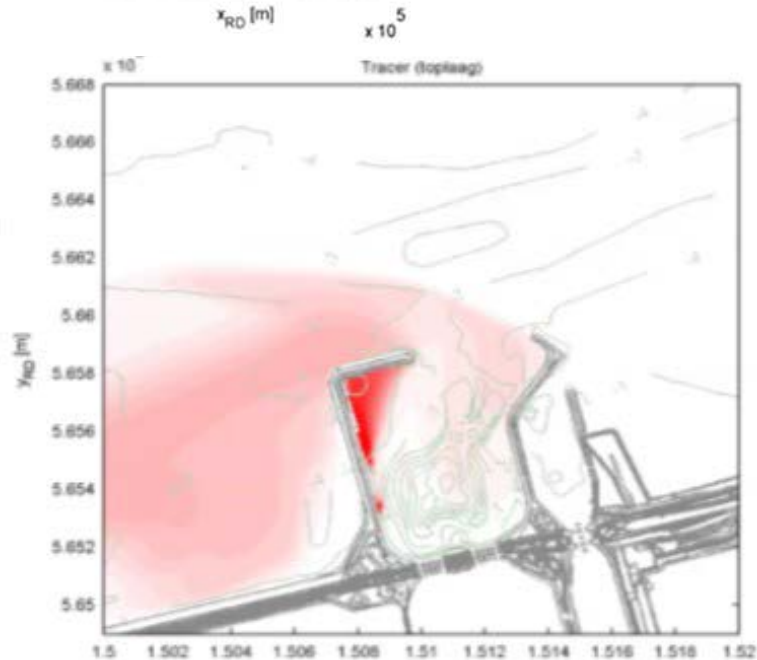
Wadden Sea

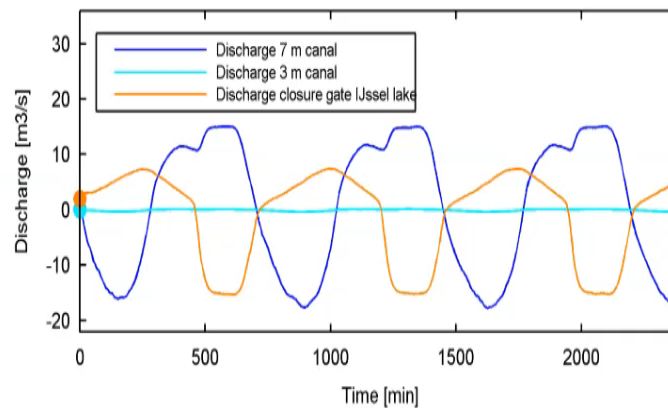
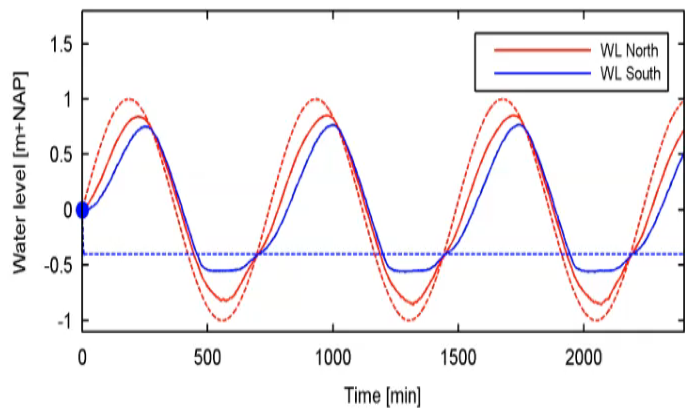
Lake IJsselmeer



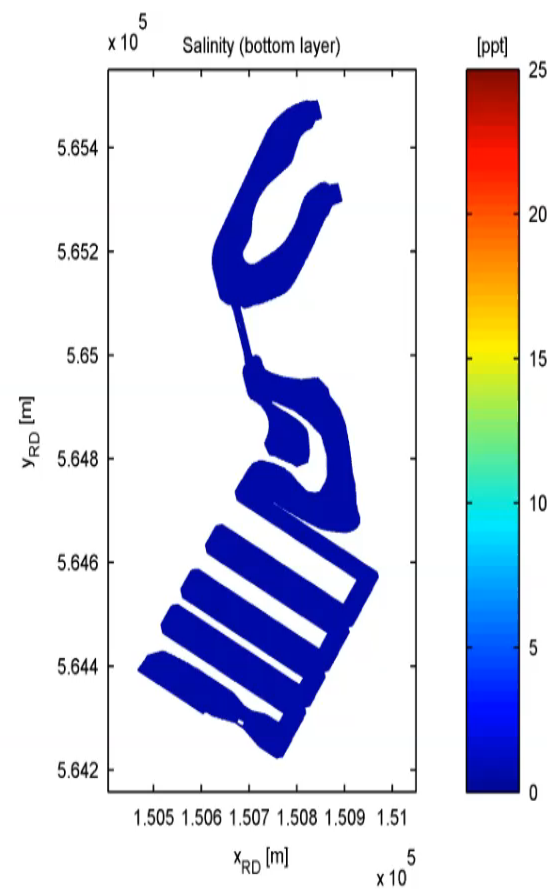
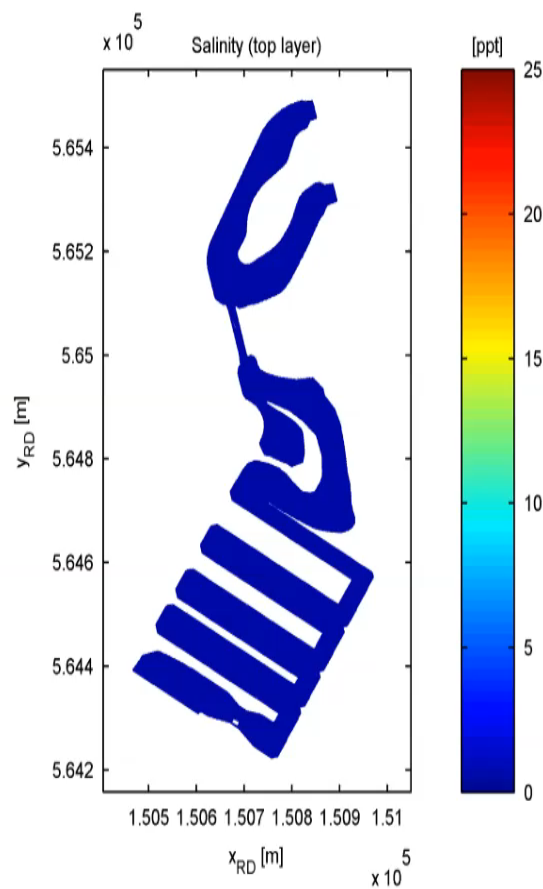
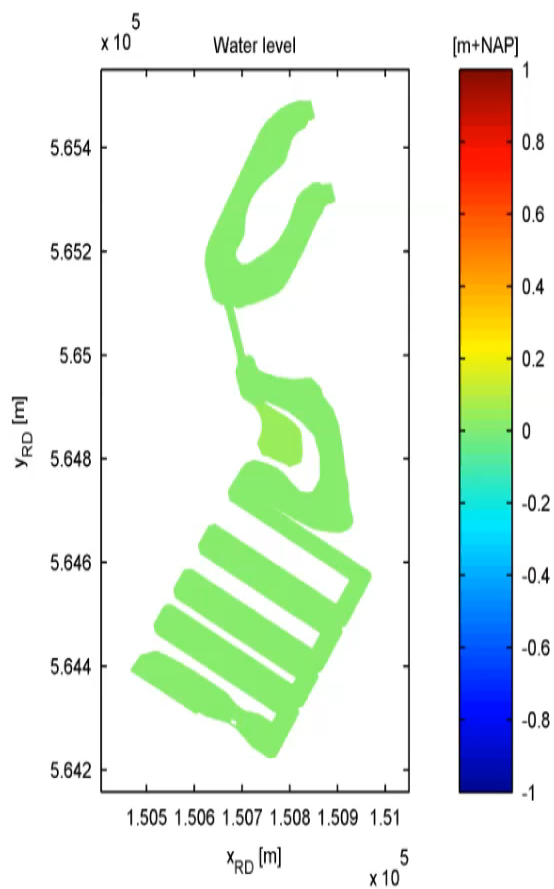


Minimize risk; modeling salinity (restriction lake IJssel), flow velocity (erosion) and attraction flow

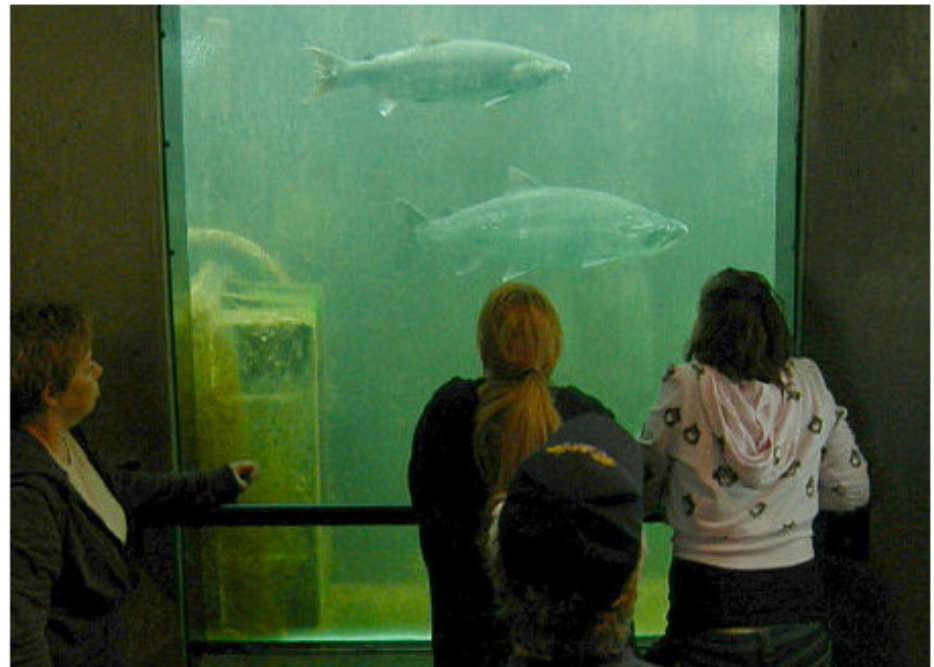




TIME : 0 min



Education & recreation, research facility





Planning

2016	Permits & Procedures
	EU LIFE-application
2017	Tender
2018?	Start construction

